

# memorandum

Idaho Operations Office

Date: August 16, 2000

Subject: National Spent Nuclear Fuel Program June 8, 2000, Strategy Meeting (EM-NPD-00-033)

To: Distribution

The semi-annual NSNFP Strategy meeting was held at the Town & Country Hotel, in San Diego, California on June 8, 2000. The following sites were represented:

DOE-HQ	OCRWM	PNNL
DOE-ID	INEEL	ANL
DOE-OR	ORNL	SNL
DOE-RL	Hanford	Bettis Atomic Power Laboratory
DOE-SRS	SRS	
NRC	DNFSB	

The NSNFP Strategy meeting is held twice a year to update the participants on the status of the Yucca Mountain Repository; to identify issues relative to preparing the DOE-owned SNF for repository placement; to share knowledge and experience; and to strengthen communication between the above organizations.

The meeting was very informative and successful due to your attendance and participation. The next meeting will be held in Las Vegas, Nevada sometime in November or December, 2000.

The meeting agenda, action items, issues, and summary of discussions are attached.

If you have questions, comments, or additional issues please contact me at (208) 526-1510.

*Original signed by Mark Arenaz*

Mark Arenaz  
NSNFP Manager

Attachment

## Distribution

Mark Abashian  
John Abrafah  
Donald Armour  
Doyle Batt  
Corey Beebe  
Robert Benedict  
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William Hurt  
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James Linhart  
Philip Loscoe  
Alan Luptak  
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Roger McCormack  
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Kenneth Picha  
Randall Ponik  
Markus Popa  
Carol Raeder  
Meraj Rahimi  
Ram Murthy  
Ronald Ramsey  
Jay Reynolds  
Robert Rosen  
Stephen Schuermann  
John Scoriah  
Michael Scott  
Subir Sen  
David Shugars  
Nancy Slater  
Barry Smith  
William Smoot  
James Smyder

Ken Sorenson  
Tim Sweeney  
Thomas Thornton  
Robert Toro  
Trieu Truong  
Douglas Turner  
Scott Vance  
John Vlahakis  
Gregg Wachs  
Phil Wheatley  
Donald Wile  
William Yeniscavich  
David Zabransky  
Abe Zeitoun

**NATIONAL SPENT NUCLEAR FUEL PROGRAM STRATEGY MEETING**  
**THURSDAY, JUNE 8, 2000**  
**TOWN & COUNTRY HOTEL**  
**SAN DIEGO, CALIFORNIA**

**AGENDA**

The Strategy Meeting was held on June 8, in conjunction with the American Nuclear Society (ANS) Summer Meeting (June 5-8, 2000), to focus on issue resolution and integration between the National Spent Nuclear Fuel Program (NSNFP), the Department of Energy (DOE) Sites, and the Office of Civilian Radioactive Waste Management (OCRWM). Related technical papers were presented on June 5, 6, and 7 as part of the ANS Embedded Topical Meeting on DOE Spent Nuclear Fuel and Fissile Material Management. DOE Site fact sheets were provided as part of the meeting handouts.

8:00 a.m.	Introduction/Opening Remarks	Mark Arenaz
8:15 a.m.	Status of Action Items from Last Strategy Meeting	Phil Wheatley
8:30 a.m.	OCRWM Direction, Perspective, and Schedules	Tim Gunter
9:10 a.m.	EM/RW Interface Logic	Phil Wheatley
9:20 a.m.	Lessons Learned	Phil Wheatley
9:30 a.m.	Break	
10:00 a.m.	Licensing Strategy Paper	Michael Scott
	» Pre Closure	
	» Post Closure	
	» Criticality	
10:35 a.m.	Repository/Canister Performance Allocation	David Rhodes
11:00 a.m.	QA Records Issue	Kerry Grooms
11:20 a.m.	DOE Integrated Repository Receipt Schedule	Corey Beebe
11:45 a.m.	Lunch	
1:00 p.m.	WASRD – Key Issues for DOE SNF	Bill Hurt
1:15 p.m.	WASRD – Comment Resolution Schedule and Status	Markus Popa
1:25 p.m.	DOE Site Compliance Plans	Bill Hurt
1:55 p.m.	NSNFP/DOE – SNF R&D Needs	Phil Wheatley
2:40 p.m.	Questions & Answers on Site Fact Sheets	Discussion
2:50 p.m.	Action Items Review/Wrap-Up	Mark Arenaz
3:00 p.m.	Adjourn	

## ACTION ITEMS

<i><b>Action Item</b></i>	<i><b>Designee</b></i>	<i><b>Due Date</b></i>	<i><b>Comments</b></i>
When an orphan material is added or deleted from the list, communicate the change to the sites. The sites would like a true composite list.	Orphan Materials Committee/ NSNFP	Ongoing	
Put the NSNFP Strategy Meeting Summary on the homepage.	NSNFP	6/22/00	
Send out a notice when the NRC interchange is scheduled.	Tim Gunter	TBD	
For the next 30-60 days, call Sheryl Morton prior to submitting a Lessons Learned, until the web page is fully transitioned.	Sites	Through 8/8/00	
Ensure the NSNFP is on distribution for the repository document review (E.g. TDDs).	NSNFP	7/1/00	
Ensure the Integrated Schedule is attached to the Dave Huizenga Letter.	Corey Beebe	TBD	
Issue a notice of the "call for proposals for the \$3.2M in SNF R&D funding. Include in the notice the needs/area of SNF R&D to allow teaming efforts with universities, other labs, etc.	Doyle Batt/ NSNFP	After the "call for proposals" has been received.	
Send a note to the NSNFP Strategy Meeting presenters to e-mail the presentations for inclusion on the NSNFP homepage.	Lori Braase	6/12/00	Complete

## ISSUES

- The NRC is not homogenous. It is important to keep them informed on the status of DOE-SNF.
- The NSNFP should provide direction to focus on one conference per year that is supported by DOE.
  - This would provide reasonable assurance that the right people would be there to facilitate critical interfaces within and out of the conference.
  - May need to look at the HLW Conference next spring in lieu of the ANS Conference.
- What are the possible Impacts to the current YMP M&O contractor when the transition contract is awarded?
  - Impacts are unknown and current schedules have not been adjusted based on the award.
  - There is not much margin in the schedule.
  - Note: If there are areas where EM can help reduce potential vulnerabilities, let them know.

## PATH FORWARD

Meeting/Conference	Location	Date
NSNFP Semi-Annual Strategy Meeting	Las Vegas, NV	November-December 2000
NSNFP Semi-Annual Strategy Meeting	Idaho Falls, ID	Summer 2001
ANS Annual Meeting (there will be one session on DOE-SNF)	Milwaukee, WI	June 17-21, 2001
ANS Annual Meeting (One topical on DOE SNF)	Hollywood, FL	June 9-13, 2002

**NATIONAL SPENT NUCLEAR FUEL PROGRAM  
STRATEGY MEETING SUMMARY  
THURSDAY, JUNE 8, 2000**

**OCRWM Direction, Perspective, and Schedules**

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**Tim Gunter**

- Q. Are the fuels cooler the first 20-40 years?
- A. Yes. The lower temperature fuels will arrive first.
- We know this is not uniform. We are expecting the fuel currently in dry storage will experience additional burnup and will be hotter prior to transfer to the repository.
  - The analysis is based on the worse case scenario of lack of control over what fuel arrives at the repository for storage.
  - The expectation is DOE fuel will be cooler than the commercial fuel.
- Q. Why is the base case for the repository analysis above the boiling point?
- A. The Site Recommendation Consideration Report (SRCR), Site Recommendation (SR), and License Application (LA) includes treatment of both cases, above and below the boiling point.
- The below boiling analysis will be addressed with sensitivity analysis.
  - The current repository waste package loading design can accommodate both cases by adjusting the spacing between waste packages or by batching the waste packages by fuel type.
- Q. What is the “no backfill” case?
- A. Originally the drifts were going to be backfilled with material, such as sand, after emplacement of the waste packages. The higher thermal output issues preclude this to allow ventilation between the waste packages.
- Q. Will the same team of people who do the sufficiency review of the SR do the LA review?
- A. There is no assurance the same people who do the sufficiency review of the SR will review the LA due to turnover issues.
- Q. What will the NRC look for in the sufficiency review for SR?
- A. The NRC will review the SRCR and not review the entire program (not a LA review). PMRs and AMRs will be provided at their request.
- Q. Are you planning on addressing the SRCR review comments in the SR?
- A. Yes, the plan is to address the NRC's comments in the SR.

- Q. Bill Kane said in the DOE Spent Nuclear Fuel and Fissile Material Management Plenary Session on Monday that all the technical issues would be resolved by the LA; however, this does not appear to be the case.
- A. Resolving all the technical issues in the LA is the goal, but it is an aggressive goal.
- Q. Will the LA be submitted if the NRC has not issued their rule?
- A. No.
- Q. Will the EPA decision affect the NRC rule?
- A. The NRC has indicated they will not wait for the EPA to issue their rule.
- Q. What are the dates for the RFP and contract award?
- A. The RFP is out and the proposals are due today, June 8, 2000. The transition contract could be awarded as late as November.
- Q. What are the impacts to the current M&O contractor when the transition contract is awarded?
- A. Impacts are unknown and current schedules have not been adjusted based on the award.
- There is not much margin in the schedule.
  - Note: If there are areas where EM can help reduce potential vulnerabilities, let them know.
- Q. What is the planning basis for the budget? What are the indications?
- A. We are optimistic that we will receive the requested amount of \$437M.
- Q. Will the direction to go to a “cooler” repository precipitate earlier shipments of DOE SNF? (Refer to the above boiling/below boiling Design Update slide #3.)
- A. The expectation is that DOE SNF and HLW will be interspersed with commercial SNF. This decision will be made during the pre-closure phase. Whether the decision is made to operate the repository at above or below boiling temperature will not affect DOE shipments to the repository.
- There will be some evolution to the base case EMI Integrated Schedule.
  - Look at balancing the needs for a level repository with the needs of EM (or what EM will be able to support).
  - We expect to have a repeated pattern of waste package types in any one particular drift.
  - There is nothing to say that we can’t shuffle waste packages around to accommodate the possibility of interrupted schedules of SNF shipments. (There is the ability to move waste packages around after resumption of the EM schedules.)
  - We need to make sure the NRC shares with their co-workers the status of the DOE-SNF based on a recent event where they thought DOE fuel would be fully characterized prior to receipt at the repository.

## Licensing Strategy Paper – (No slides provided)

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### Michael Scott

- One year ago, John Clouet and Mike Scott developed a draft Licensing Strategy Paper to gain support from the NRC. It was sent to RW and NSNFP for review.
  - In March 2000, it was revised based on comments received from RW and reissued for comment.
  - It will be revised again upon receipt of comments from RW and NSNFP.
  - Aspects of the Licensing Strategy Paper:
    1. Pre-Closure
      - Shows performance allocation to the canister is an incredible event.
      - No DBE (no breach of canister).
      - Waste form will not impact the canister in the event of a drop.
      - It shows if the canister is dropped, it will not breach.
      - The chemical reactivity and source term issues are shown to be non-issues.
    2. Post-Closure
      - Under discussion.
      - NSNFP has two test case data qualification packages.
      - Ascertain the challenges of getting the data qualified.
    3. Criticality
      - Pre-closure issues. Use qualified data, enrichment, and fissile mass loading to show a critical even will not happen.
      - Post-closure issues.
        - A Topical Report was submitted to the NRC that screened the base case TSPA on criticality and probability.
        - Answered ~80 NRC comments.
        - NRC issued a draft safety evaluation report and expect to issue the final soon.
          - Settles the question about acceptability of methodology.
        - The revision to the Topical Report, addressing NRC issues, should be issued to the NRC this next fiscal year.
        - Expect to use this type of communication with the NRC for other SNF types.
- Q. If you screen it out the events on probability, then why bother screening for consequence?
- A. To provide reassurance that even if the event occurred, the consequence is not of concern. Criticality is a political issue and not the only thing we are looking at for non-basis events.
- Q. What is the application to DOE SNF?
- A. There are nine represented fuels that provide the bounding scenarios for all of the DOE SNF and packaging is analyzed for the conditions assumed to be critical.



- Q. Will DOE SNF have to use this method to do probability and consequence analysis like what commercial SNF is doing?
- A. DOE is not expecting a criticality with packaging and managing their SNF.
- If you limit yourself on probability, you have to have qualified data.
  - The NRC will submit our assumptions to a great deal of scrutiny.
  - Addendum's seem to take about one year.
    - If the LA is submitted in March 2002, then a complete analysis will not be completed until March 2003, which is not an ideal date.
- Q. How do you integrate the Topical Report into the LA?
- A. We will reflect in the LA what we turn into the NRC, even though the NRC has not approved it .
- The LA for commercial fuel will include DOE SNF and the waste form will be part of the SAR.
  - The intention is to put the full story in the LA. If this is not possible, then assumptions will be included in the LA to cover the items that are not complete.
- Q. What about the Technical Guidance Documents?
- A. The final Part 63 and the revised TDD is due out in the fall of this year. The LA will kickoff next spring.

Summary:

- The Navy is on review for the detail documents for analysis of the waste form at the repository.
- The NSNFP (EM) should be included on the distribution list (NSNFP should provide a focal point).

## **Repository/Canister Performance Allocation**

### **David Rhodes**

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- Q. Are you looking for modifications to the canister or the Monitored Geologic Repository (MGR)?
- A. Modifications are being analyzed for the CTS design based on the assumption that a canister drop is possible, but not a canister breach.
- Q. What is the adequate design basis for a rattle drop of a canister?
- A. The focus is to lower the possible drop height of the canister in the MGR systems (e.g., lowering the bridge crane). The only drop scenario that exceeds the MGR design basis is with the Hanford MCO. RW needs 2' between the bottom of the canister/MCO and the floor.
- Q. Do cask requirements need to be included in the WASRD?
- A. Putting the requirements in the WASRD ensures the drop requirements are handled for the Hanford MCO for transportation.

- Q. What is the analysis for the Canister Storage Building at Hanford?
- A. There are impact limiters below and between the MCOs. We know the MCO can survive more than a 2' drop, but the analysis is not complete.
- The WASRD has requirements for canisters to survive a drop.
  - We are trying to integrate the canister limitations and handling facility limitations to determine the requirements margin (e.g., the floor integrity with the canister drops is driven by the Hanford MCO.)
  - The Navy fuel is robust and is capable of meeting structural requirements for drops. (Navy exemption)

## **QA Records Issue**

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### **Kerry Grooms**

- Q. Will facility records be turned over at License Application?
- A. Records that are needed to bound fuel for analysis may be required at LA to support a decision.
- Q. Wouldn't the QA report be sufficient rather than the facility records?
- A. RW would want complete records prior to shipment (records package). A complete package assembly and review should not be needed for LA.

Three-tiered Questions for QA to resolve:

1. If we go forward with the boundary fuels approach for DOE SNF, what is our basis for showing they are appropriately bounded?
  2. What has to accompany the bounding analysis for LA? What records are needed?
  3. If we have ability to provide a full data package to LA for some fuel sets, then this would move the data from some fuels from post-LA to pre-LA. It may make sense for some fuels, which would need to be identified.
- The set of data requested from RW will be based on fuel form, but the type of data should be fairly consistent.
  - The WASRD should be clear as to what will be needed for the waste for record requirements.
  - The repository would likely need access to the records that affect the repository performance (the location has not been resolved).
  - LSN = Licensing Support Network

## **DOE Integrated Repository Receipt Schedule**

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### **Corey Beebe**

- Q. Is there going to be enough HLW glass to codispose with the DOE SNF canisters in the waste package in the repository?

- A. Yes, there is enough potential HLW glass, but it is not clear if all of it will be accepted. The EIS scenarios moved up the HLW production at the INEEL by five years.
- Up until 4667 HEU HLW glass canisters have been filled, there is not a problem.
  - There may be issues with shortage of HLW glass canisters at the end of the campaign.
- Q. There is a concern from the sites that they need to know what direction DOE Headquarters and RW want the sites to follow. The sites need to know if the funding will be there to meet the direction.
- A. Once the Integrated Optimized Schedule is in place, the sites need to do a gap analysis to determine their realistic abilities in meeting the schedule.
- An implementable schedule will be developed based on what the sites can and can not do to meet the 2010 date.
  - The Integrated Schedule is an operational tool to keep us connected.
  - It is important to keep the Integrated Schedule in a maintenance mode and avoid having to repeat this effort in a few years.
  - The Integrated Schedule will provide a baseline for each of the sites.
  - It is also important to facilitate planning and as an aid in identifying the support systems needed to transport SNF in 2010 (e.g., loading facilities, etc.).
  - We are not asking the sites to change anything now, only to do the gap analysis.

## **WASRD – Key Issues for DOE SNF**

### **Bill Hurt**

- Q. What is the basis for the 1.3 kilograms?
- A. The 1.3 kilograms is based on an assumed canister breach and analytical calculations based on the amount of hydride.
- There is work in the NSNFP that should eliminate this requirement.
  - There is a concern that the 1.3-kilogram limitation can not be measured. It seems like an arbitrary number.
- Q. Is there a definition on what “best available data” means?
- A. No, the definition is unresolved.
- This issue will be worked through continual communication with RW.
- Q. What process do you follow to resolve comments received from the sites?
- A. There is a formal comment resolution process. The comments are addressed and then the author of the comment will have the opportunity to agree or disagree with the comment resolution.

## **WASRD – Comment Resolution Schedule and Status**

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### **Markus Popa**

- Q. Will the canister thermal output limits change?
- A. The canister thermal output limits are based on the current best guess as of today.
- Q. Can you capture comments separately?
- A. Yes, if they are segmentable. The meeting yesterday resolved some of the comments received to date.

## **DOE Site Compliance Plans**

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### **Bill Hurt**

- Q. Is there a requirement in the WASRD for site Compliance Plans?
- A. Compliance Plans are called out in the MOA between EM and RW. They are an opportunity to get the sites engaged. The requirements were in the original EM letter to the sites in January 2000. There is no due date specified in the MOA, but EM has requested these documents.
- The instantaneous release rate for DOE fuel is being requested.
    - ANL-W (SNF is now being reclassified as HLW).
  - Compliance Plans are only due from the Interim Storage Sites (INEEL, Hanford, and SRS).
    - Note: In the coming years of SNF transfers between sites and other nations, make sure you get the right data if possible from the shipping sites.
  - The status of the Site Compliance Plans is as follows:
    - SRS – complete.
    - Hanford – extension. (They have been unable to measure water, particulates, etc. that are outlined in the WASRD.)
    - INEEL – has responded that they will comply, but there has been no response as to how.
  - We do not know the outcome of the Site Compliance Plans until all the sites get down to the level of detail needed to show how fuel will be dried, handled, packaged, etc.
  - Compliance plans may or may not be the same as the WOPS (HLW) and may be a binding document between the sites and EM.

## **NSNFP/DOE – SNF R&D Needs**

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**Phil Wheatley**

- MDAS Update
  - We expect to know whether MDAS works by the end of this year.
  - It has not made measurements in the active mode.
  - If it does not work, there is a real concern for obtaining required data.

## **Questions and Answers on the Site Fact Sheets**

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### **Open Discussion**

1. Will the product from the SRS Melt and Dilute process be removed from the SNF Database?
  - The ROD is pending approval.
  - The HEU was changed to MEU.
  - The Melt and Dilute product will remain on the SNF database; however, it may be tagged in the SNF Database differently.
2. The scheduled date for loading the first Hanford MCO is no later than 11/30/00.